Ruffed Grouse Drumming Survey

Like many wildlife species, ruffed grouse breed in the spring. During this time, males claim territories and try to attract females. During courtship displays, males will raise the crests on the top of their heads, the ruffs on the sides of their necks, and their fan-shaped tails. Males also create a well-known springtime drumming sound by rapidly beating their wings while standing on a stationary object. They start slowly and it sounds like loud thumps at first, but as the wings build up speed it sounds like a drum or a 2-cycle engine starting. The sounds are created by the compression of air between the birds' bodies and their wings.

The Wildlife Division takes advantage of this spring ritual by conducting roadside routes to count the number of drums heard. Routes were established in locations of known grouse populations. Each route has ten listening stops that are consistent from year to year. The number of ruffed grouse drums heard during a fixed time interval (four minutes) is recorded at each stop. Data are summarized as the number of grouse heard per survey route. This survey provides the Wildlife Division an additional method to monitor the ruffed grouse population.

Preliminary Grouse Drumming Results for 2005*

(*The numbers will be final when the annual status report is published later this year.)

There were 98 grouse drumming routes that were completed this year. A statewide drumming survey was also conducted in 2004, which provided data from 107 routes. A paired t-test was performed using data from 92 routes run in both 2004 and 2005. The paired t-test indicated no change statewide in number

of grouse heard between 2004 (8.2 drums heard per route) and 2005 (8.5 drums heard per route; t=-0.38, P=0.70).

Data analysis at the regional scale indicated that there was a significant increase in the number of drums heard in Zone 2 (43 routes completed in both years; 7.9 drums heard per route in 2004 and 9.9 drums heard per route in 2005; t=-2.6, P=0.01). Paired t-tests indicated no changes in Zone 1 (39 routes completed in both years; 8.9 drums heard per route in 2004 and 7.3 drums heard per route in 2005; t=1.3, P=0.2) and Zone 3 (10 routes completed in both years; 6.5 drums heard per route in 2004 and 7.1 drums heard per route in 2005; t=1.3, P=0.2). A map of Michigan's hunting and trapping zones can be found here.

Ruffed grouse have ten-year cycles in abundance over much of Canada, Alaska, and the Great Lakes states of Wisconsin, Minnesota, and Michigan (Rusch et al. 1999). The population in Michigan is expected to peak in 2010 (Figure 1). Many theories have been proposed to explain these cycles including diseases, weather, forest fires, sunspots, starvation, crowding, predators, genetic changes, and chance (Rusch 1989).

Literature Cited

Rusch, D.H. 1989. The grouse cycle. Pages 210-226 *in* S. Atwater and J. Schnell editors. Ruffed Grouse. Stackpole Books. Harrisburg, Pennsylvania, USA.

Rusch, D.H., J.R. Cary, and L.B. Keith. 1999. Pattern and process in ruffed grouse cycles. Midwest Fish and Wildlife Conference. 61:238.

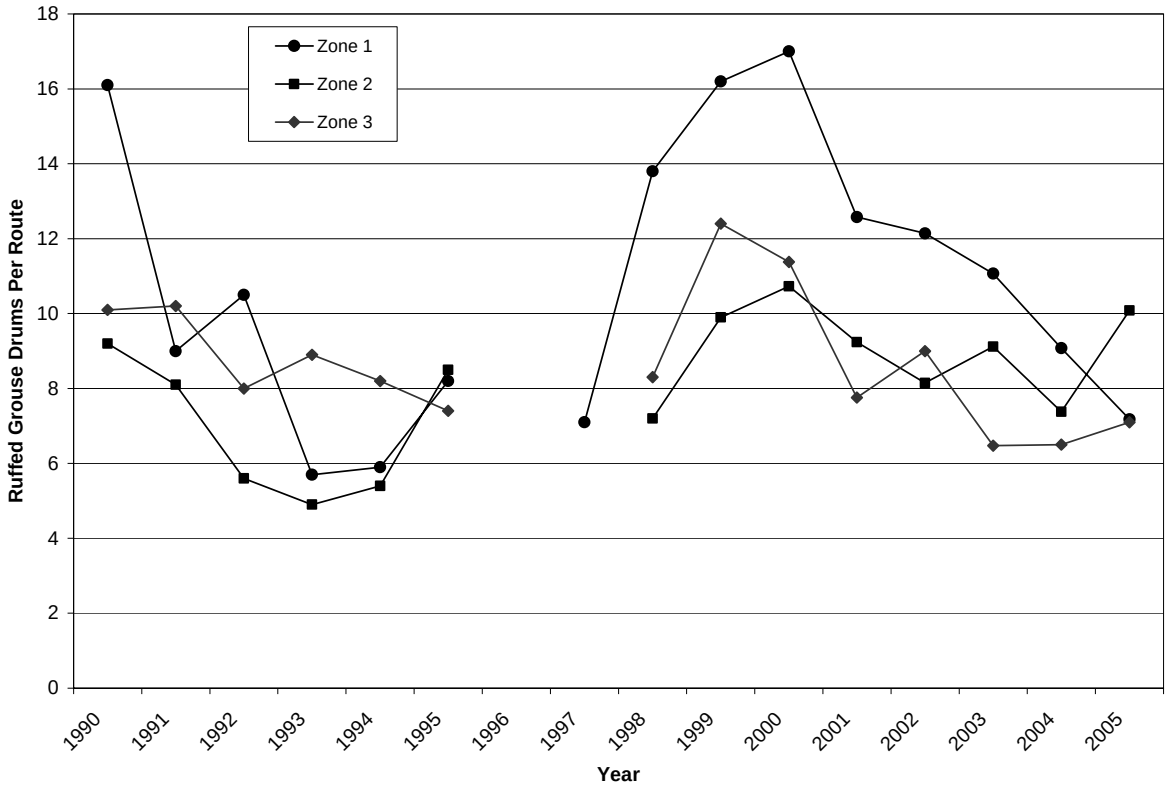

Figure 1. Ruffed grouse breeding population index (drums per route) in Michigan, 1990-2005. Drumming surveys were not conducted in 1996 and were conducted only in Zone 1 in 1997.